

WHAT IS CLAIMED IS:

1. A gas generation system, comprising:
a reformer for producing a hydrogen-containing reformat gas using raw materials, at least a first of the raw materials containing carbon and hydrogen;
a separator device configured to selectively separate the hydrogen-containing reformat gas into hydrogen and a residual gas;
a recirculation system for recirculating an amount of the residual gas from a first location downstream of the separator device to a second location upstream from the separator device.
2. The gas generation system as recited in claim 1, wherein the second location is directly in front of the separator device.
3. The gas generation system as recited in claim 1, wherein the second location is in an entry area where the raw materials enter the reformer.
4. The gas generation system as recited in claim 1, further comprising an enrichment device configured to enrich the hydrogen-containing reformat gas with hydrogen and disposed between the reformer and the separator device, wherein the second location is between the reformer and the enrichment device.
5. The gas generation system as recited in claim 1, wherein the separator device includes at least one diaphragm selectively permeable for hydrogen.
6. The gas generation system as recited in claim 1, wherein the recirculation system includes a transport device for the recirculated residual gas.
7. The gas generation system as recited in claim 6, wherein the transport device includes a gas jet pump driven by a volume flow of at least one of the raw materials or the hydrogen-containing reformat gas stream.

8. The gas generation system as recited in claim 1, wherein the reformer includes a steam reformer.
9. The gas generation system as recited in claim 1, wherein the reformer includes an autothermal reformer.
10. The gas generation system as recited in claim 1, wherein the gas generation system is configured to generate a hydrogen-containing gas from one of a liquid hydrocarbons and hydrocarbon derivatives for operating a fuel cell.
11. The gas generation system as recited in claim 10, wherein the gas generation system is configured to generate a hydrogen-containing gas from one of a gasoline and a diesel oil.
12. The gas generation system as recited in claim 10, wherein the fuel cell is part of a drive system for one of a water transportation device, a land transportation device, and an air transportation device.
13. The gas generation system as recited in claim 10, wherein the fuel cell is part of an auxiliary power unit.
14. The gas generation system as recited in claim 13, wherein, the auxiliary power unit is utilized in a transportation device, the transportation device including at least one of a water transportation device, a land transportation device, and an air transportation device.
15. The gas generation system as recited in claim 14, wherein the transportation device is driven by an internal combustion engine.
16. The gas generation system as recited in claim 1, wherein the residual gas includes hydrogen.